

APPENDIX D

DIGITAL DIVISION SUPPLEMENT

This appendix provides a discussion and vision of the future effects of digitization on the SBCT infantry battalion. The information in this appendix does not change current doctrine of battalion employment. It is intended as an introduction to the effects digitization may have on the battalion.

Digitization is the ongoing effort to integrate the Army's diversified battlefield operating systems into an information exchange network while also enhancing the mission capabilities necessary in a multidimensional battlespace. The future battlespace will be characterized by the effective use of information technology to mass the effects of dispersed firepower rather than exclusive reliance on the physical massing of weapons and forces, which was the primary method employed in the past. Digitization provides rapid sharing of enemy and friendly information among all forces within the battlespace, shares a near-real-time situational picture among those forces, and enhances combat power by making combat forces more lethal and survivable.

D-1. DEFINITION OF DIGITIZATION

FM 101-5-1 defines "digitization" as "the near-real-time transfer of battlefield information between diverse fighting elements to permit a shared awareness of the tactical situation." Digitization is the application of equipment and information technology to acquire, exchange, and employ timely information throughout the battlespace. This information is tailored to the needs of each leader and soldier, allowing each to maintain a clear and accurate vision of the battlespace to support mission planning and execution. Digitization is based on the ability to collect and use common data through networks of sensors, command posts, and weapons platforms. The goal is to create a force equipped to face any contingency, to win the information war against any adversary, and to provide commanders, soldiers, and CSS planners the information each needs to make the vital decisions necessary to prevail in any operation.

D-2. PURPOSE AND GOALS OF DIGITIZATION

The intent of digitization is to enable forces to be more lethal and survivable in an environment characterized by an accelerated operational tempo, instant communications, and immediate response times. Digitization allows leaders and soldiers to communicate vital battlefield graphic information instantly rather than through voice radio and even slower liaison efforts. It provides an integrated digital information network that supports battlefield fire and maneuver and increases command and control. Digitization creates a simultaneous, appropriate picture of the battlespace at each echelon--from soldier to commander--based on the common data collected through the digitized network. This allows leaders and soldiers to collect and use relevant information and maintain an up-to-date awareness of what is happening around them. Some of the major goals of digitization include--

- The rapid processing and transfer of information.
- The capability to react on information faster than the enemy.
- Enhanced situational picture at all levels.
- Increased ability to synchronize direct and indirect fires.
- A means to establish and maintain an overwhelming operational tempo.

D-3. GENERAL CAPABILITIES RESULTING FROM DIGITIZATION

Digitization incorporates advancements in computer, communications, and satellite navigation. Satellite navigation, digital communications, and digital mapping allow leaders and soldiers to see a common picture of the battlespace in real time, resulting in a shared situational picture of what is happening around them. New computer capabilities allow leaders to concentrate battlefield combat power more decisively through the high-speed digital exchange of data, the simultaneous display of intelligence data to leaders at all levels, and the rapid exchange of targeting data from sensors to shooters. Digitization also enhances the leader's capability to receive and send critical planning information needed for mission preparation. It streamlines mission planning and preparation by providing critical information simultaneously to every leader. This compresses the mission planning and preparation cycle by allowing access to needed information earlier in the planning process.

D-4. BATTLEFIELD ADVANTAGES OF DIGITIZED EQUIPMENT

Digitization provides the potential for new techniques and battlefield advantages. For example, tactical computers, Land Warrior (LW) systems, position navigation, and digital communications capabilities enhance coordination, reduce fratricide, and speed up assembly, linkup, relief in place, and passage of lines operations.

D-5. LIMITATIONS OF DIGITIZATION

While maximizing the advantages of digitization, leaders and soldiers must account for the limitations imposed by it. For example, most digitized equipment has a limited battery life that results in the need to transport more batteries and increases the soldier's carrying load. Much of this new equipment is less durable under field conditions and is increasingly complex, requiring highly trained soldiers and leaders to use the equipment effectively. This also means more cross-training at the platoon and squad levels. Another key limitation of digital communications systems is range. In general, digital communication bursts travel only about one half the distance of FM radio transmissions. It is more effective to communicate via FM radio when in contact, but the combination of digital and radio communications equipment potentially increases the unit's electronic signature. (Information transmitted digitally does not have a large signature by itself but presents a large electronic signature when used in combination with significant voice traffic.) Leaders utilizing digital transmissions must minimize voice radio traffic to reduce the chance of detection.

D-6. NEW RESPONSIBILITIES

A major impact of digitization will be the integration of new equipment into existing operations and the challenge of controlling the potential flood of digitized information that is available to the commander.

a. While digitization may speed up planning and preparation for battle, leaders cannot fight the battle from a computer screen. Receiving, transmitting, and updating information processed by tactical computers (used by the mounted soldiers) and LW system computers (used by the dismounted soldiers) consumes both time and the commander's attention. As operations progress and information accumulates, computer screens can become cluttered to the point they are unusable. There is danger that, in attempting to manage this information during contact, leaders can become caught up in fighting from their computers. Thus, leaders should assign a designated data terminal operator (DTO) to operate and monitor the computer and to transmit digital reports. The DTO is also responsible for most digital information processing such as frequency and password updates and other routine functions of digital net control. Units establish the digital nets the same as analog nets.

b. The battalion and subordinate units must be prepared to operate without the use of digital communications because they will still need to coordinate with nondigitized adjacent forces. In addition, they must have "crash" procedures to boot up the system in case of computer failure. They must also have parallel procedures, such as manually plotted graphics, to overcome a complete loss of digitized information.

c. Tactical computers and LW systems require protection procedures to prevent the compromise of digital information. Operational security is a key component of protection. The increase of electronic equipment makes units more susceptible to breaches in OPSEC. The most critical piece of equipment to safeguard is the commander's tactical computer or LW system, because, at a minimum, it contains the entire SBCT's information. Depending on the commander, it may contain location information and the status of the entire battalion. Commanders must establish password protection when initializing their tactical computer or LW system. Password protection ensures the tactical computer or LW system enters the digital net at the appropriate level and has access to information appropriate to that commander. It prevents unauthorized access to the unit's digital database. Password protection is the first step in safeguarding the digital database. Ultimately, there must be procedures for destruction of the computer's data and the computer to prevent its capture and compromise.

d. The commander also has new responsibilities to ensure all applicable digital equipment is incorporated into each training scenario, to perform cross training on new equipment and procedures, and to provide the proper care, maintenance, and inspection of all assigned digital equipment.

D-7. COMMAND AND CONTROL

Perhaps the largest and most immediate impact of digitization is its effect on the command and control process. Digitization streamlines planning and preparation by allowing the simultaneous transfer of information between all leaders. This enables them to plan and prepare concurrently. Using digitized equipment should compress the planning cycle for commanders and allow planning at all levels to begin sooner.

D-8. MILITARY DECISION-MAKING PROCESS

Digitization's immediate impact on the military decision-making process is that it provides the ability to receive and transmit WARNOs, FRAGOs, and OPORDs digitally between levels of command. This means that subordinates can learn about operational

requirements sooner and begin planning and preparation without waiting for an OPORD. Using this advantage means that commanders must incorporate digital tasks into the MDMP. The following paragraphs discuss the impact of digitization on the MDMP.

a. **Receipt of Mission.** The battalion may receive the mission by voice, by radio, in writing, or digitally, and it may be in warning order, operation order, or fragmentary order format. The digitized unit can receive a warning order from SBCT headquarters over the tactical computer or LW system almost as soon as the SBCT receives a mission tasking from division. The battalion should receive the order over the tactical computer in the form of a free-text message or preformatted warning order with accompanying digital graphics.

(1) **Acetate Overlays.** If the battalion is working with a nondigitally equipped element, the battalion staff must ensure that element receives an acetate overlay of the operational graphics. Every subordinate commander and leader should maintain acetate overlays as a backup in case the digital system fails.

(2) **Warning Order.** Digital systems enable the battalion to receive a warning order as soon as it is issued on the digital net. Upon receipt of the battalion warning order, subordinate units begin preparations based on the commander's guidance and battalion SOP. The battalion staff should issue follow-up WARNOs as new information becomes available. Due to the digitized unit's enhanced information-sharing capabilities, subordinates can receive continuous information updates throughout the decision-making process.

b. **Mission Analysis.** With the advent of digitization, subordinates can take the initiative and begin preparing for combat based on digital warning order(s) while the battalion goes through the military decision-making process. Subordinate commanders should not wait until the formal OPORD is issued to begin preparation for the upcoming mission.

(1) The battalion continuously refines the plan as new information becomes available, and it issues follow-up WARNOs to subordinate units over the tactical computer or LW system. Mission analysis allows the battalion commander to begin his battlefield visualization. The major result of the mission analysis is a definition of the tactical problem and the start of determining feasible solutions.

(2) The battalion receives a digital enemy situational template and paragraph 1a (enemy situation) from the SBCT. As the mission analysis nears completion, the battalion commander issues a warning order to company commanders by tactical computer. The company commanders develop their own situational templates and send these refined situational templates to their platoon leaders over the tactical computer.

(3) The battalion staff may use the tactical computer to send requests for information to the SBCT to assist during the mission analysis process. The SBCT, in turn, may use the tactical computer to get intelligence information from division to answer the requests for information. The SBCT may also receive digital information from the SBCT reconnaissance troop's digital computer if the troop is deployed. By the same token, the battalion may gain information from the deployed battalion reconnaissance platoon. Any major change in information could affect the IPB process, the CCIR, and the mission.

(4) Weather and terrain information can be provided in the digital display of the area of operations. The battalion also receives update messages of weather changes that may impact on the mission in a free-text message format over the tactical computer. Insofar as

weather changes and new information on terrain can affect the mission, they also affect mission analysis.

(5) Members of the battalion staff can use the tactical computer to access battalion status based on updates from subordinate units. The staff can consider the location, strength, weapons systems, training level, maintenance status, and logistical status of subordinate units and the capabilities of attached elements. The battalion can receive continuous digital updates on subordinate units' combat and logistical status and location by LW system or tactical computer. This information is closely related to mission analysis in the areas of available assets, constraints, and critical facts and assumptions.

(6) The battalion staff enters into the tactical computer an overlay of graphic control measures to support the operation and sends this to subordinates digitally, rapidly providing the graphic portion of the initial warning order of the mission analysis process.

c. **Course of Action Development.** The battalion commander provides his guidance to the battalion staff, which then develops courses of action. The battalion staff uses the tactical computer to graphically depict enemy and friendly forces on both sides and the supporting sketches.

d. **Course of Action Analysis.** The purpose of COA analysis is to identify which COA will accomplish the mission with minimum casualties while positioning the battalion to retain the initiative for further operations. The method of this analysis is through war gaming, which may be conducted by digitization with the MCS-Phoenix (MCS-P) in the main CP.

e. **Course of Action Comparison.** Each battalion staff officer performs a COA comparison of each COA, making use of the evaluation criteria developed in step 5 of the war-gaming process. In weighing the advantages and disadvantages of each COA, the battalion staff should use the tools the tactical computer has for this purpose, such as a decision matrix. The battalion staff presents to the commander the results of the comparison with a recommended COA.

f. **Course of Action Approval.** The commander decides on the COA, and the battalion staff immediately issues a warning order with the essential information for company commanders to refine their plans. The staff uses the tactical computer or LW system to issue the order.

g. **Orders Production.** The commander and staff develop the operations order from the approved COA and issue it through the tactical computer. When the battalion is widely dispersed and cannot assemble its commanders to receive the OPORD, the commander can send the OPORD with accompanying graphics to subordinates by tactical computer or LW system.

(1) Regardless of whether the OPORD is digital or oral, the battalion uses the tactical computer or LW system to send subordinate units the mission statement, the concept of the operation, a brief overview of the enemy situation, and a maneuver paragraph with operations graphics. This provides subordinate commanders with an overview of the plan and allows them time to formulate pertinent questions and post digital graphics to their maps.

(2) With the advent of digitization, it has become even more crucial for subordinate commanders to take initiative and begin preparing for combat based on digital warning orders while the battalion prepares the detailed plan. Subordinate leaders must begin preparing when they begin receiving digital warning orders over their tactical computers.

This is called parallel planning. The company commanders continue to monitor their tactical computers to refine their planning and preparation as additional information becomes available.

D-9. EFFECTS OF DIGITIZATION ON MISSIONS

Digitization affects mission accomplishment in the following ways:

a. The FBCB2 displays the current location of all platoons (or, if need be, each combat vehicle). This increased situational picture allows digitized formations to move more rapidly during tactical movement. Digitized units can also use waypoints entered into their tactical computers to assist in navigating from waypoint to waypoint. They can use the tactical computer's preformatted spot reports to report any enemy forces they detect and can digitally call for direct or indirect fire. Calls for indirect fire are relayed through the AFATDS.

b. Commanders can control tactical formations with greater precision using the position navigation (POSNAV) capability of the tactical computer and LW system. The commander plans movement routes after receiving obstacle overlays and situational template overlays in the MCS-Light. He relays this information to the tactical computer or LW system to identify reported enemy and obstacle locations. He can create additional graphic control measures, as needed, on his operations overlay. These include routes of march, coordination points, waypoints, passage points, and boundaries for subordinate units. The commander retrieves digitized map data from the MCS-Light to analyze the terrain in his area of operations, and he relays this information to the tactical computers and LW systems. The tactical computers and LW systems display maps with current background terrain information automatically reflecting elevation, road networks, water obstacles, general vegetation, and built-up areas.

c. Digital maps and overlays provide the unit with a common picture of the terrain and operational graphics. However, commanders must maintain a paper map with an acetate operational graphics overlay in case of system failures. The POSNAV capabilities of the tactical computer and LW system are an enhancement to tactical navigation, not a replacement. Commanders, leaders, and soldiers must still navigate using basic land navigational and terrain orientation skills. If they cannot do this, then a system failure or a lag time in position updates will prove disastrous in combat.

d. The ASAS-Light receives information from JSTARS and UAVs, which pinpoint enemy locations on a real-time basis and relays that information through the FBCB2 to the tactical computer and LW system. This input, coupled with the locations of friendly units, provides a superb situational picture and continuous real-time battle tracking.

D-10. OFFENSIVE OPERATIONS

Digitization requires the following considerations during offensive operations.

a. During contact, commanders must not fight from their computers. The designated DTO should assume responsibility for monitoring and sending digital messages during the battle.

b. As the commander conducts a reconnaissance of the objective, he can use the LW system's digital terrain and operational graphics to place enemy icons where he sights the enemy during the reconnaissance. The feed from UAVs through the AMDWS helps

locate other enemy positions. The commander designates sectors of fire, inputs TRPs on the tactical computer, and sends this information digitally to his subordinate units.

c. During movement, the commander uses his MCS-Light to interface with tactical computers and LW systems to determine accurate positions of friendly forces. The FBCB2, through tactical computers and LW systems, provides real-time information on the battalion's location, the location of other battalions and SBCT elements, the tactical situation, and the enemy. During movement, the leader ensures units navigate from waypoint to waypoint using basic land navigation skills supplemented by the tactical computer's digital navigation capability. The commander can quickly verify progress of elements he cannot see by glancing at his tactical computer or LW system's position updates. The commander can send new control measures and FRAGOs digitally to his subordinates over the tactical computer while a movement is in progress. As the assault element moves through the assault position, commanders should switch from using their tactical computers or LW systems to using conventional techniques for control and communications.

d. Digitization allows units to establish security on or near the objective quickly by using the enhanced information-sharing capabilities of the tactical computers through the CSSCS. These assets enable units to assess and report the status of personnel, ammunition, supplies, and essential equipment. During consolidation, the commander monitors the tactical computer or LW system to determine that the units are in their positions according to the original plan and METT-TC. Once positioned to defend against an enemy counterattack, units create and send sector sketch information using their digital computers, LW systems, or both. This information allows the commander to verify the location and orientation of elements when the situation does not allow him to walk the entire security perimeter.

e. During reorganization, commanders identify and report losses using their tactical computers or LW systems. Subordinate units update their personnel, ammunition, supply, and essential equipment status reports and send these updates through the next higher headquarters to the BSB. The BSB then consolidates these subordinate reports, updates, and status reports and forwards the requirements to the supporting headquarters for processing. Units then redistribute ammunition, personnel, equipment, and other mission-essential items based on the information obtained from the CSSCS status reports.

D-11. DEFENSIVE OPERATIONS

Digitization requires the following considerations during defensive operations.

a. Defensive operations are usually a time management challenge. Digitization enhances the force's ability to manage time through information sharing without the need for travel to exchange hard copy information. The battalion commander and his subordinates use digital information to assist them in determining where and how best to employ their units in the defense using the MCS-Light. Additionally, they use digital situation updates to enhance their information dominance, reducing the possibility of the enemy striking at a time or place where the companies are unprepared. Each company should receive updated enemy situation reports depicting actual and suspected enemy locations from the AMDWS over the tactical computer or LW system. This occurs when the SBCT sends down enemy updates to the battalion tactical computer or LW system. The battalion commander then forwards this information to the companies.

b. As the battalion commander and staff prepare the defensive plan, they template the engagement area early in the planning process. They mark TRPs through the MCS-Light on the tactical computer or LW system's digital map to gain a better understanding of the limitations and constraints under which the battalion must operate during the mission. They then transmit these TRPs to subordinates using the tactical computer or LW system. The staff also templates friendly positions to identify proposed battle positions. They identify tentative positions on the tactical computer or LW system and disseminate them to subordinates as soon as possible to support concurrent planning. The battalion commander ensures that the rudiments of the proposed fire plan are placed on the tactical computer or LW system.

c. Regardless of the fire control technique used, the intended graphic control measures are marked on the MCS-Light, relayed to the tactical computer or LW system's digital maps, and disseminated to subordinates. During the construction of the engagement area, the company commanders mark the TRPs with thermal devices, denoting the sectors and quadrants. After making all adjustments and refinements, including platoon input to the company plan on the digital operational overlay, the company commanders send these digital adjustments to the battalion.

d. Each unit commander ensures he can communicate digitally with his subordinates, either over the tactical computer or, for dismounted elements, over the LW system. The battalion commander ensures that the battalion can communicate digitally with the SBCT FBCB2.

e. Once in position, the company commanders check their position locations on the tactical computer or LW system to ensure that they are complying with battalion digital graphics. As the battalion occupies its positions, the commander and staff monitor the position location update of each of the companies to ensure they are located in accordance with the plan. They note any discrepancies and send corrections digitally using the tactical computer or LW system. Company commanders also physically confirm that positions are properly occupied.

f. Once the company has established its defensive position, the commander uses the tactical computer to send accurate positions to his commander and adjacent units, ensuring that he includes the location of vehicle positions, obstacles, TRPs, and fire support targets. The battalion consolidates company and platoon positions and relays the information to the SBCT using FBCB2 graphics.

g. Subordinate units using tactical computers and LW systems prepare digital sector sketches. Digitization provides commanders and leaders a more accurate means for recording and sharing sector sketch data. Squad, section, and platoon leaders enter the same sector sketch data found on a standard handwritten sector sketch into their tactical computers or LW system computers. These sketches are then passed to adjacent units and up the chain of command, with each level summarizing the information for the next higher level.

h. Subordinate units depict their patrol routes and OP locations on the tactical computer or LW system and send them to the battalion CP. This assists in fratricide prevention and ensures that units throughout the battalion adhere to the S2 or S3's reconnaissance and security plan. Patrols and OPs use the tactical computer and LW system to aid them in looking and listening for the enemy. However, patrol leaders must not rely only on digital POSNAV to navigate because computer failure or lengthy time

delays between position updates could prove disastrous in combat. Subordinate commanders and leaders must ensure that soldiers use the tactical computer and LW system POSNAV as an enhancement to basic land navigational skills.

i. Soldiers on patrol and at OPs should have their tactical computers or LW systems prepared to send a spot report as soon as they detect the enemy. These reports need to be passed quickly up the chain of command.

j. Digitized equipment enhances the battalion platoons' abilities to fill the gaps in security between OPs. Coordination of patrols with higher and adjacent units is easier and more thorough. Subordinate units forward tentative patrol routes to the company commanders over the tactical computer or LW system. Subsequently, the team commanders forward the patrol routes to the battalion. This allows the S2 and S3 to ensure that all routes are coordinated for fratricide prevention and that the companies and platoons conform to the battalion reconnaissance and surveillance plan for the defense.

k. Subordinates ensure that their OPs are digitally linked. Digital systems enhance the abilities of OPs to detect the enemy earlier and send more accurate reports. OPs use tactical computers or LW systems to send digital situation reports. Digital reports are better than FM radio transmissions because the OP can send them without violating noise discipline, and the receiving station is less likely to misinterpret the information if it is written. OPs should not be positioned outside of small-arms weapons range for force protection reasons.

l. As the enemy attacks into the battalion sector, JSTARS and UAVs, if available, can track him while moving. As the ASAS-Light provides enemy information, the S2 can provide battle tracking of enemy movement. The FBCB2 should aid in displaying this intelligence information to each tactical computer and LW system. In this situation, the battlefield situational picture extends beyond the battalion commander to every soldier having these displays.

m. In like manner, the real-time battle tracking of enemy and friendly forces that aids the situational picture greatly improves counterattack plans and the actual counterattack. Individual combat vehicles receive detailed information on the enemy before that enemy crosses the intervisibility line in their sector.

D-12. SECURITY OPERATIONS

Digitization requires the following considerations during security operations.

a. The battalion security element attempts to prevent or disrupt enemy reconnaissance efforts. First, when UAVs are available in sector, using them to battle track the enemy with ASAS-remote work station (ASAS-RWS) and FBCB2 makes it clear when reconnaissance units are likely to enter the security zone. By monitoring their tactical computers, subordinate units avoid mistaking friendly units for enemy forces.

b. The impact of digitized battle tracking makes withdrawals to the main battle area safer. MBA elements can see the withdrawal route and other control measures on their tactical computers, LW systems, or both. The MBA units can observe the movement of the security force from the beginning until the completion of the withdrawal. Digitized battle tracking pinpoints the real-time location of the enemy.

D-13. STABILITY AND SUPPORT OPERATIONS

Digitization requires the following considerations during stability and support operations.

a. **Maintaining Stability.** Stability operations usually consist of enforcing agreements using checkpoints and patrols in the battalion area of operations. The tactical computer and LW system can display specific checkpoint locations and the locations of moving patrols in the AO. Reaction forces can therefore gain a clear idea of the location of a force needing support and their own relative location in relationship to that force.

b. **Support Operations.** The battalion provides humanitarian or environmental assistance, often after a natural or manmade local disaster. Digitization equipment, especially GPS and POSNAV devices, assists in navigation where some local landmarks, including signs and roads, may be obliterated.

D-14. FIRE SUPPORT

Digitization requires the following considerations for fire support.

a. Digital enhancements can streamline both indirect fire support planning and calls for fire. Subordinates can receive the fire support overlay through the tactical computer or LW system. Calls for fire are preformatted in both the tactical computer and LW system, allowing digital calls for fire. Once a call for fire is entered into the digital net, it can go to any indirect fire asset operating on the net.

b. Digitization allows a faster response to requests for direct and indirect fire. Requests can be routed directly to the FSO's AFATDS to call for fire. Using the tactical computer or LW system, soldiers can call grid, polar, or shift-from-a-known-point fire missions using preformatted indirect fire requests. The tactical computer and LW system also assist soldiers in calling for fire because their POSNAV capability provides a precise grid location at a glance.

c. The company FSOs and the battalion FSO can clear the fire much faster because they have updated displays of all unit position locations on the digital display screen of their LW system or AFATDS computers. Company FSOs can clear fires quicker and more effectively because they can ensure they are not firing artillery or mortars at friendly troops.

d. The tactical computer allows the leader to add a new target icon when he adds a new target. Unit SOPs assign someone, such as the DTO, to delete unplanned targets after use. This is necessary to prevent screen clutter and the confusion that results from it. Digital enhancements allow any soldier in a tactical unit to call for indirect fire support using either the tactical computer or LW system. These systems allow leaders to use preplanned targets from the digital fire support graphics. The commander or leader simply calls up a particular target he wants fired and sends the firing data through the routing described above.

D-15. COMBAT SERVICE SUPPORT

Digitized enhancements make the processes of supply status reports, supply requests, medical evacuation, and maintenance operations more timely and accurate. The following considerations apply.

a. A CSS overlay on the tactical computer or LW system can depict resupply points, company and platoon casualty collection points, EPW collection points, company and battalion trains, cache sites, and main supply routes. The computer keeps an accurate status of all classes of supply and personnel based on updates from vehicle commanders and squad leaders. Reports are then "rolled up" and forwarded to higher command. Each

subordinate unit should establish an SOP to monitor and report its supply status digitally before, during, and after engagements. Resupply is timelier because of the tactical computer and LW system's POSNAV ability. This helps soldiers and medics locate resupply points, cache sites, supply routes, company trains, and battalion trains quickly.

b. Subordinate commanders and leaders should receive a digital display of the CSS overlay on their tactical computers and LW systems. As a minimum, this overlay should include resupply points, casualty collection points, EPW collection points, company trains and battalion trains locations, cache sites, and main supply routes.

c. Subordinate units begin each mission with an accurate supply status in their tactical computers or LW systems. As these units use supplies, the commander or leader updates his status using the tactical computer or LW system. As soldiers use supplies, they provide status updates to their leaders.

d. Regardless of the resupply technique, the resupply point is designated on the digital graphics, and the unit navigates directly to the resupply point. When supplies are pre-positioned, the digital graphics designate their location, and the unit can navigate directly to that location.

e. Digital enhancements aid units in conducting MEDEVAC. The tactical computer and LW system's POSNAV capability allows soldiers and MEDEVAC personnel to locate the CCPs and the BAS quickly. Commanders and leaders use their tactical computers to locate the CCPs so they can consolidate casualties. They can use the nine-line MEDEVAC request format preset in the computer to request MEDEVAC. Using the automated request ensures the requestor provides all the data the medics need and provides current position updates with the request. Using POSNAV to locate the CCP reduces the time required to find and evacuate the casualty. The unit should develop an SOP to determine who requests MEDEVAC and through what channels the request is routed. The unit SOP should specify how CCPs, casualties, and pickup zones are to be marked.

f. Digital enhancements also aid MEDEVAC personnel in medical procedures. For example, each medic can have access to a medical digital assistant (MDA), which is essentially a ruggedized laptop computer that stores and has access to medical data for treating patients. By using the MDA, the medic can pull up crucial treatment information in a matter of seconds to assist him in patient treatment.

D-16. MAINTENANCE

Proper equipment maintenance is essential for any unit conducting sustained operations. Commanders and leaders must ensure that soldiers maintain the unit's equipment properly. Digital equipment adds to the maintenance load. However, it also allows a unit to report identified deficiencies to battalion maintenance assets rapidly and accurately and enables the maintenance assets to respond more quickly and easily, reducing down time. If equipment is damaged or nonworking during the battle, the person responsible for maintenance can use his tactical computer to request maintenance assistance. Maintenance assets use their tactical computers or LW systems, along with POSNAV, to find and repair or evacuate equipment on the battlefield. The POSNAV capability of the tactical computer can direct the maintenance recovery vehicle to the exact location of the damaged vehicle.

D-17. TRAINING AND PERFORMANCE

The ability to accomplish unit tasks successfully lies in the training level of the soldiers and the leader's mastery of the leader tasks. The entire unit must learn new tactics, techniques, and procedures to acquire the full advantage of digitization.

a. Digitization's largest impact is on the commanders and leaders in the practice of command and control. There is new equipment for individual soldiers to learn. Integrating this new digitized equipment into the command and control process poses a challenging problem for future commanders and leaders.

b. Executing battle drills or any other type of operation using new digitized equipment and procedures at first seems more difficult and dangerous than existing methods. It is imperative that commanders, leaders, and soldiers understand both the advantages and the limiting factors of digitization and apply the advantages while overcoming the initial complicating difficulties. Adapting to digitization will be a continuing process for commanders as new equipment and processes are tested, proven, and fielded to combat units.